

Appl. No. 10/810,977
Amdt. dated December 11, 2006
Reply to Office Action of August 9, 2006

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Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-21 (canceled).

Claim 22 (previously presented): A permanently wettable superabsorbent material comprising:

a superabsorbent material; and

a surfactant;

wherein the superabsorbent material has a hydrophobic surface;

wherein the surfactant has at least one reactive functional group that is reactive with the superabsorbent material;

wherein the surfactant has at least one non-reactive functional group that is non-reactive with the superabsorbent material;

wherein the surfactant has been applied to the superabsorbent material as a surfactant solution; and

wherein the surfactant solution includes an amount of water that is sufficient to activate the hydrophobic surface of the superabsorbent material to promote reaction between the at least one reactive functional group and the hydrophobic surface of the superabsorbent material, but less than sufficient to cause significant swelling of the superabsorbent material.

Claim 23 (previously presented): The permanently wettable superabsorbent material of claim 22 wherein said superabsorbent material is a fiber.

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Claim 24 (previously presented): The permanently wettable superabsorbent material of claim 22 wherein said surfactant solution includes a solvent to said surfactant but a non-solvent to said superabsorbent material.

Claim 25 (previously presented): The permanently wettable superabsorbent material of claim 22 wherein said permanently wettable superabsorbent material has a floating time of less than 30 seconds, as measured by the Flotation Time procedure.

Claim 26 (previously presented): The permanently wettable superabsorbent material of claim 22 wherein said permanently wettable superabsorbent material has a reduction in surface tension of saline of less than about 30% when compared to an untreated superabsorbent material, as measured by the Surface Tension Test.

Claim 27 (previously presented): The permanently wettable superabsorbent material of claim 22 wherein said superabsorbent material is selected from the group consisting of alkali metal salts of polyacrylic acids, polyacrylamides, polyvinyl alcohol, ethylene maleic anhydride copolymers, polyvinyl ethers, hydroxypropylcellulose, polyvinylmorpholinone, and polymers and copolymers of vinyl sulfonic acid, polyacrylates, polyacrylamides, polyvinyl amines, polyallylamines, and polyvinylpyrrolidone.

Claim 28 (previously presented): The permanently wettable superabsorbent material of claim 22 wherein said superabsorbent material is selected from the group consisting of agar, algin, carrageenan, starch, pectin, guar gum, chitosan, and the like, modified natural materials such as carboxyalkyl cellulose, methyl cellulose, hydroxyalkyl cellulose, chitosan salt, dextran, and the like.

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Claim 29 (previously presented): The permanently wettable superabsorbent material of claim 22 wherein said at least one reactive functional group is selected from the group consisting of quaternary ammonium groups, amino groups, carboxyl groups, sulfonate groups, phosphate groups, and their corresponding acid groups.

Claim 30 (previously presented): The permanently wettable superabsorbent material of claim 24 wherein said solvent is selected from the group consisting of isopropanol, methanol, ethanol, butyl alcohol, butanediol, butanetriol, butanone, acetone, ethylene glycol, propylene glycol, glycerol, and mixtures thereof.

Claim 31 (previously presented): The permanently wettable superabsorbent material of claim 22 wherein said water is present from about 1 to 10% by total weight of the solvent.

Claim 32 (previously presented): The permanently wettable superabsorbent material of claim 22 wherein said surfactant is applied to said superabsorbent material when said hydrophobic surface of said superabsorbent material is sufficiently solvated to promote reaction between said at least one reactive functional group and said superabsorbent material.

Claim 33 (previously presented): A disposable absorbent product comprising a liquid-permeable topsheet, a backsheet attached to the topsheet, and an absorbent structure comprising the permanently wettable superabsorbent material of claim 22 positioned between the topsheet and the backsheet.

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Claim 34 (previously presented): A permanently wettable superabsorbent fiber comprising:

a superabsorbent fiber; and

a surfactant;

wherein the superabsorbent fiber has a hydrophobic surface;

wherein the surfactant has at least one reactive functional group that is reactive with the superabsorbent fiber;

wherein the surfactant has at least one non-reactive functional group that is non-reactive with the superabsorbent fiber;

wherein the surfactant has been applied to the superabsorbent fiber as a surfactant solution;

wherein the surfactant solution includes an amount of water that is sufficient to activate the hydrophobic surface of said superabsorbent fiber to promote reaction between the at least one reactive functional group and the hydrophobic surface of the superabsorbent fiber, but less than sufficient to cause significant swelling of the superabsorbent fiber; and

wherein said surfactant is applied to said superabsorbent fiber when said surface is activated by increasing an amount of said at least one reactive functional group available to react at said hydrophobic surface of said superabsorbent fiber.

Claim 35 (previously presented): The permanently wettable superabsorbent fiber of claim 34 having a reduction in surface tension of saline of less than about 30%, as measured by the Surface Tension Test.

Claim 36 (previously presented): A disposable absorbent product comprising a liquid-permeable topsheet, a backsheet attached to said topsheet, and an absorbent structure comprising the permanently wettable superabsorbent fiber of claim 34 positioned between the topsheet and the backsheet.

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Claim 37-39 (canceled).